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ABSTRACT

Intended to aid administrators, architects, engineers, and contractors in designing barrier-free environments for the physically handicapped, the booklet contains information on accessibility aspects of the New York City Building Code and recommendations derived from experiments with the handicapped community as well as national and international sources. Recommendations (often accompanied by illustrative diagrams) are offered concerning the design of facilities such as exits, ramps, bathrooms, elevators, drinking fountains, public telephones, and parking lots. Also provided are wheelchair specifications and a barrier-free checklist. (LH)

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BARRIER-FREE DESIGN

ACCESSIBILITY FOR THE HANDICAPPED

PHYLLIS L. TICA
JULIUS A. SHAW

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
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ACCESSIBILITY FOR THE HANDICAPPED

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INSTITUTE FOR RESEARCH AND DEVELOPMENT
IN OCCUPATIONAL EDUCATION
CENTER FOR ADVANCED STUDIES IN EDUCATION
THE GRADUATE SCHOOL AND UNIVERSITY CENTER
CITY UNIVERSITY OF NEW YORK

in cooperation with

THE DIVISION OF OCCUPATIONAL EDUCATION SUPERVISION
and
THE BUREAU OF TWO YEAR COLLEGE PROGRAMS

THE NEW YORK STATE EDUCATION DEPARTMENT
UNIVERSITY OF THE STATE OF NEW YORK

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Jack A. Schneps, Project Director

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ACKNOWLEDGEMENTS

We would like to take this opportunity to compliment the dedicated groups throughout the country who work so deligently to transform accessibility information into legislation, and hope that their success will encourage legislators in other areas to create a barrier-free environment so that handicapped people may enjoy a more reasonable freedom choice.

A very special note of appreciation to James Mazzaferro, Assistant Administrator of the New York City Transportation Administration, without whose assistance, cooperation and understanding this document would not exist; to Administrator Michael J. Lazar, Transportation Administration; Administrator, John T. Carroll, Municipal Service Administration; and to Commissioner Herbert J. Simins, of the Department of Public Works, for his cooperation and early commitment to have many of the recommendations included in contracts let by that department; to the Committee to Advance the Goals of Higher Education for the Disabled at City University for its invaluable assistance; and to Paul Chakonas, Associate, Bureau of Two Year College, S.E.D. for his sincere and active support.

Phyllis L. Tica
Julius A. Shaw

FORWARD

This document has been compiled so that policy makers, administrators, architects, engineers, and contractors have a convenient source of information to enable them to design and build a barrier-free environment in which the mobility of physically handicapped persons is not inhibited by external forces.

It is comprised of the accessibility aspects of the existing New York City Building Code and additional recommendations gathered from national and international sources and, most importantly, from first hand experiments with the handicapped community.

Permission was given for a pre publication draft of this material to be distributed to participants at the Statewide conference, Responding tc needs of the Handicapped: Two Year College Strategies Workshop. The expansion and subsequent distribution of this document is one of a number of ongoing efforts of IRDOE to assist institutions in their efforts to reach and prepare individuals for gainful occupation consistent with their capacities and abilities.

Jack A. Schneps
Project Director,
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Workshop/Conference

Lee Cohen
Director
Institution for Research and
Development in Occupational
Education

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Accessibility For The Handicapped

Listed are the relative provisions mandated by the existing Building Code, followed by recommendations which are felt should be required and/or listed as preferred when possible.

* Recommend to be mandated

** Recommend as referred

I. Alterations

Building Code C26 103.0 - 103.5

Sub-Article 103.0 ALTERATION OF EXISTING BUILDINGS Subject to the provisions of section 100.5, and except as otherwise specifically provided by the provisions of this code, the following provisions shall apply to the alteration of existing buildings, whether made voluntarily or as a result of damage, deterioration, or other cause.

C26-103.1 Alterations exceeding 60 percent of building value. If the cost of making alterations in any 12 month period shall exceed 60 percent of the value of the building, the entire building shall be made to comply with the requirements of this code.

C26-103.2 Alterations between 30 percent-60 percent of building value. If the cost of making alterations in any 12-month period shall be between 30 percent and 60 percent of the value of the building, only those portions of the building altered shall be made to comply with the requirements of this code.

C26-103.3 Alterations under 30 percent of building value or of a converted dwelling. If the cost of making alterations in any 12-month period shall be under 30 percent of the value of the building, or if the building is a converted dwelling, those portions of the building altered may, at the option of the owner, be altered in accordance with the requirement of this code, or altered in compliance with their previously required condition and with the same or equivalent materials and equipment, provided the general safety and public welfare are not thereby endangered.

C26-103.4 Alteration involving change in occupancy group or use. If the alteration of a building or space therein results in a change in the occupancy group, classification of the building under the provisions of article 3, then the entire building shall be made to comply with the requirements of this code. If the alteration of a space in a building involves a change in the occupancy of use thereof, alteration work involved in the change shall be made to comply with the requirements of this code and the remaining portion or the building shall be altered to such extent as may be necessary to protect the safety and welfare of the occupants.

C26-103.5 Alteration cost: building value. For the purpose of applying the foregoing provisions of this subarticle, the cost of making alterations shall be determined by adding the estimated cost of making the proposed alterations computed as of the time of submitting the permit application, to the actual cost of any and all alterations made in the proceding 12-month period; and the value of the building shall be determined at the option of the applicant on the basis of 1.25 times the current assessed valuation of the building, as adjusted by the current State equalization rate, or on the basis of the current replacement cost of the building, provided that satisfactory evidence of current replacement cost is submitted to the commissioner.

C26-103.6 Alterations to multiple dwelling and conversions to multiple dwellings. At the option of the owner, regardless of the cost of the alteration or conversion, an alteration may be made to a multiple dwelling or a building may be converted to a multiple dwelling in accordance with all requirements of this code or in accordance with all applicable laws in existence prior to December 6, 1968, provided the general safety and public welfare are not thereby endangered.

II Exits
Building Code C26 600.1-601.1

C26-600.1 Scope. The provisions of this article shall control the design, construction, protection, location, arrangement and maintenance of required exit facilities to provide safe means of egress from all building hereafter erected, altered or changed in occupancy; except that exit requirements for special uses and occupancies, as provided in articles 7 and 8 shall take precedence over the provisions of this article.

C26-600.2 Definitions. For definitions to be used in the interpretation of this article, see article 2.

C26-600.3 Inadequate exists for existing structure. Every structure existing on the effective date of this code which is not provided with exist facilities as prescribed in this code, and in which the exit facilities are, in the opinion of the commissioner, inadequate for the safety of the occupants, shall be provided with such means of egress or fire protection as the commissioner shall direct.

SUB-ARTICLE 601.0 DETERMINATION OF EXIT REQUIREMENTS

C26-601.1 Exit requirements. The determination of exit requirements for a building shall be based upon the Occupancy Group classification of the building, the number of occupants, the floor area, the travel distance to an exit, and the capacity of the exits, as provided in Table 6-1 and herein. Every floor of a building shall be provided with exit facilities for its occupant load. The occupant loads of floors shall not be cumulative for the purpose of designing vertical exists, except where one floor is used by another as a means of egress. Vertical exits provided from any floor above grade may serve simultaneously all floors above grade, and vertical exits provided from any floor below grade may serve simultaneously all floors below grade.

(a) Mixed occupancy. When a building is classified in more than one occupancy group in accordance with the provisions of section C26-301.3, the exit requirements for the entire building shall be determined on the basis of the occupancy group having the strictest exit requirements. or the exit requirements for each building section shall be determined separately.

(b) Incidental occupancies. When a building contains incidental occupancies classified in occupancy groups other than that under which the building is classified, the exit requirements for the floor on which such occupancies occur shall be based upon those of the occupancy group under which the building is classified; but the access and exit requirements for the incidental occupancy shall be based upon the occupancy group classification of the incidental occupancy.

(c) Multiple occupancy or use. Where a building, floor, or space is used for multiple purposes involving different activities at different times, that occupancy involving the greatest number of occupants shall be used in

determining the exit requirements.

(d) Building access. All buildings classified in other than occupancy groups A, B-1, or B-2 open structures of D-2, or J-3, shall have at least one primary entrance accessible to and usable by individuals in wheelchairs. Such entrance shall provide access to a level that makes elevators available in buildings where elevators are provided. Where ramps are used to comply with this requirement, they shall have a slope not greater than 1 in 12, and shall otherwise conform to the provisions of section C26-604.10.

III Doors
Building Code C26 604.4

C26-604.4 (e) Door Opening Widths. The capacity of exit and corridor openings shall be as listed in Table 601. Door jambs or stops and the door thickness when open shall not reduce the required width by more than 3 in. for each 22 in. of width. The maximum width of any swinging door leaf shall be 48 in. The minimum nominal width of corridor and exit door openings shall be 36 in. except that where a door opening is divided by mullions into two or more door openings, the minimum nominal width of each such opening shall be 32 in. (see door recommendation C). The minimum nominal width of other door openings shall be as follows:

(1) Door openings to all habitable and occupiable rooms - 32 in. (see recommendation Door 'a').

(2) Door swinging in pairs (no mullion), opening 48 in.

(3) Door opening to rooms used by bedridden patients and all single door openings used by patients in buildings classified occupancy group H-2 - 44 in.

(4) Door openings to toilet rooms in building to which the public has free access shall be 32 in. (see recommendation, Door'a').

(5) Door openings giving access to at least one toilet, lavatory and bathtub or shower in each dwelling unit, in buildings or spaces classified group J-1 or J-2, when such dwelling unit is accessible to individuals in

wheelchairs - 32 in.

(6) Door openings giving access to all toilets, lavatories and bathtubs or showers serving single room occupancies which are accesiable to individuals in wheelchairs - 32 in.

(f) Door heights. The minimum nominal door opening height for exit and corridor doors shall be 6 ft. 8 in. Door jambs, stops, sills, and closets shall not reduce the clear opening to less than 6 ft. 6 in. (See Illustration 2A).

(g) Door swing. Exit doors, corridor doors from rooms or spaces classified in high hazard occupancy group A, and corridor doors from rooms required to have more than one door under the provisions of section 603.1, shall swing in the direction of exit travel. (See Illustration 2H).

Except:

(1) Exterior street floor exit doors, other than those from interior stairs from buildings classified in occupancy groups J-2 and J-3

(2) Doors from rooms of instruction in buildings classified in occupancy group G having an occupant load of less than 75 persons

(h) Floor level. The floor on both sides of all exit and corridor doors shall be essentially level and at the same elevation for a distance, perpendicular to the door opening, at least equal to the width of the door leaf, except that where doors lead out of a building the floor level inside may be 7 1/2 in. higher than the level outside. (See recommendation, Door 'g')

(i) Closed doors. Exit doors and corridor doors shall normally be kept in the closed position, except that corridor doors in buildings classified in occupancy group H-2 shall be exempt from this requirement.

Recommendations

**a 604.4 (e-1 and e-4) presently require 32 in. door widths. This should be corrected to a 36 in. width door opening. (See illustration 2A).

*b Doors to require not more than 8lbs. pressure to be opened and be operable by a single effort.

*c 604.4 (e) presently requires that where a door opening is divided by mullions into two or more door openings the minimum nominal width of each such opening be 32 in. This should be increased to 34" or doors hinged to allow 32" of clear space. (See Illustration 2B-C).

*d All doorsills must be bevelled edges which merge to a common level with the floor on either side. Doorsills should be eliminated wherever possible. (See Illustration 2D).

**e Protruding door handles preferred on sliding doors.

*f Doors not intended for normal use should have knurled hardware to signify danger to blind and partially sighted persons. (See Illustration 2F).

*g 604.4 (h) allows for a 7 1/2 in. change in floor level at an entrance/exit door opening. This should not be permitted as it precludes accessibility for the wheelchair bound.

*h Power operated self opening doors are preferred whenever possible (electric eye or other).

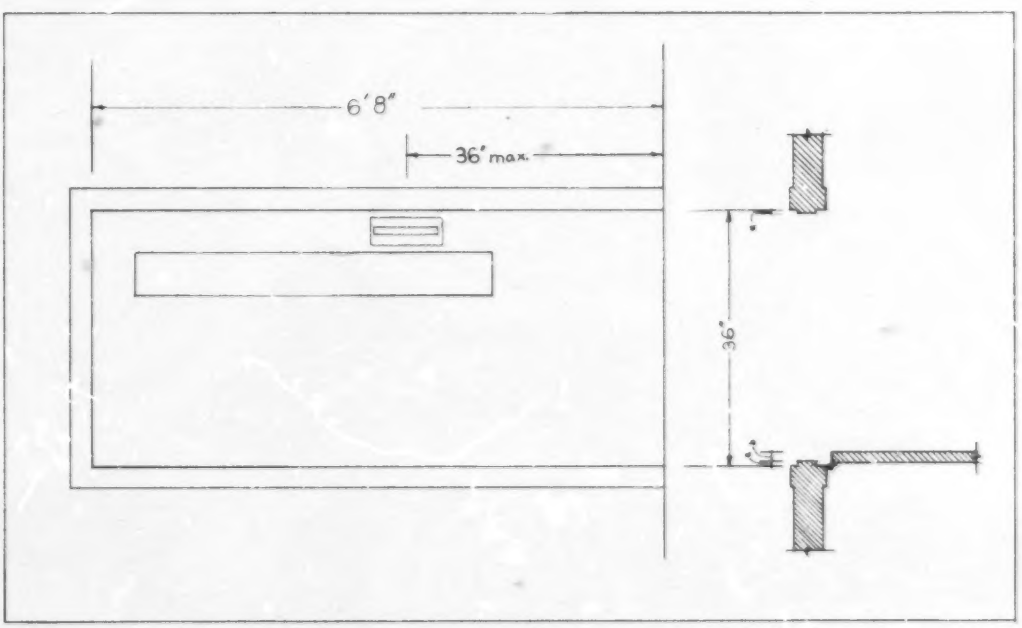
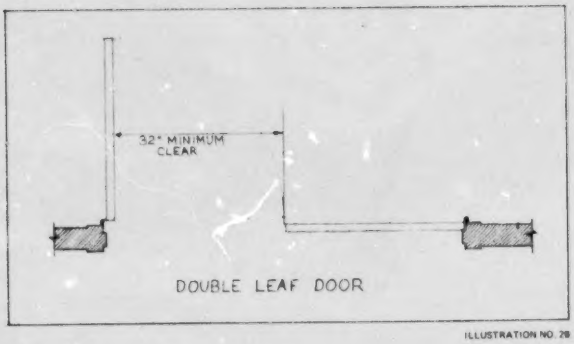


ILLUSTRATION NO. 2A

ILLUSTRATION NO. 2C



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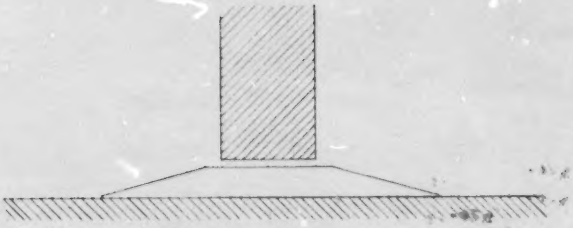

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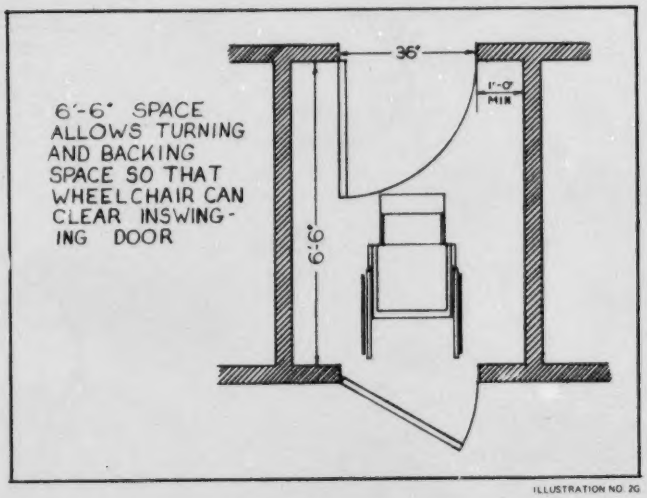

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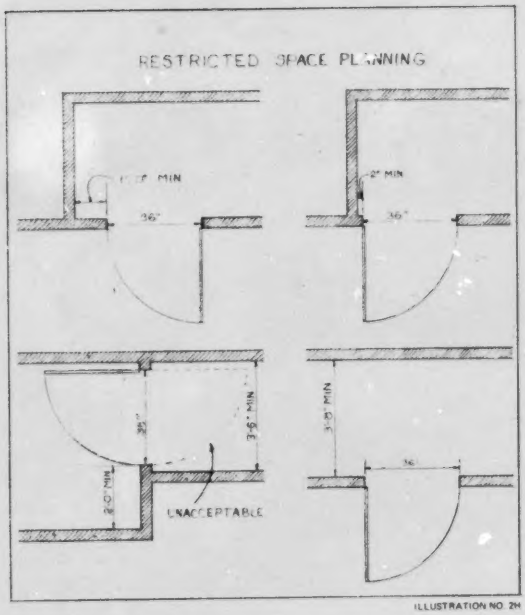

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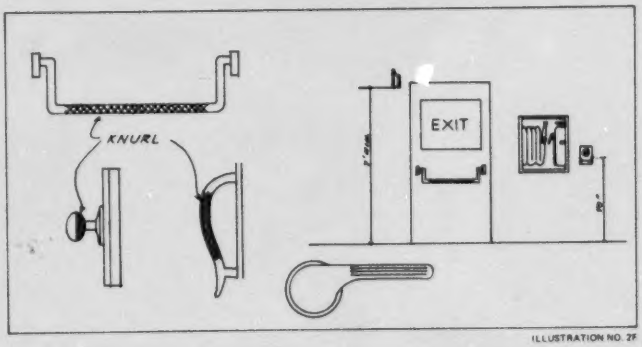


ILLUSTRATION NO. 2F

IV Ramps
Building Code C26 407.2 & 604.10

C26-407.2 When a building erected prior to December 6, 1969 is altered to provide access to individuals in wheelchairs ramps constructed to provide such access may, with the approval of the commissioner, project beyond the street line for a distance of more than 44 in.

C26-604.10 Ramps. Interior or exterior ramps may be used as exits in lieu of interior or exterior stairs provided they comply with the applicable requirements for interior stairs in section C26-604.8 or exterior stairs in section C26-604.9 respectively, and with the following.

(a) Capacity. The capacity of ramps shall be as listed in Table 6-1.

(b) Maximum Grade. Ramps shall not have a slope steeper than 1 in 8, except that in buildings classified in occupancy group H the slope shall exceed 1 in 12, and except as provided in article 8 for places of assembly.

(c) Design

(1) CHANGES IN DIRECTION. Ramps shall be straight, with changes in direction being made at level platforms or landings, except that ramps having a slope not greater than 1 in 12 at any place may be curved. (See recommendation Ramps d)

(2) LENGTH. The sloping portion of ramps shall be at least 3 ft. but not more than 30 ft. long between level platforms or landings.

(3) PLATFORMS. Level platforms or landings, at least as wide as the ramp, shall be provided at the bottom, at intermediate levels where required, and at the top of all ramps. Level platforms shall be provided on each side of door openings into or from ramps, having a minimum length in the

direction of exit travel of 3 ft. and when a door swings on the platform or landing a minimum length of 5 ft. (see recommendation Ramps d, e, f)

(4) DOORS. Door opening into or from ramps shall comply with the requirements for stairs in section C26-604.8 (g). No door shall swing over the sloping portion of a ramp.

(5) GUARDS AND RAILINGS. Guard and railings of ramps shall comply with the applicable requirements of section C26-604.8(f) except that only ramps having a slope steeper than 1 in 12 need comply with the requirements for handrails, and intermediate handrails shall not be required. (See recommendation Ramps 'a').

(6) SURFACE. Interior ramps exceeding a slope of 1 in 10 and all exterior ramps shall be provided with nonslip surfaces.

Recommendations

*a Handrails 32 in. high, intermediate rails 22 in. high on both sides of free standing ramp. If ramp runs adjacent to wall, handrail and intermediate rail required on one side only. Rails to extend 18 in. beyond top and bottom of ramp unless this would present a safety hazard. (See illustration 3A & 3B.)

**b Ramp width to be a minimum of 36 in. or usable space, preferable 48 in. in new construction. (See illustration 3A - 3B -3C.)

In renovation a minimum of 36 in. where there is an insufficient allowable space.

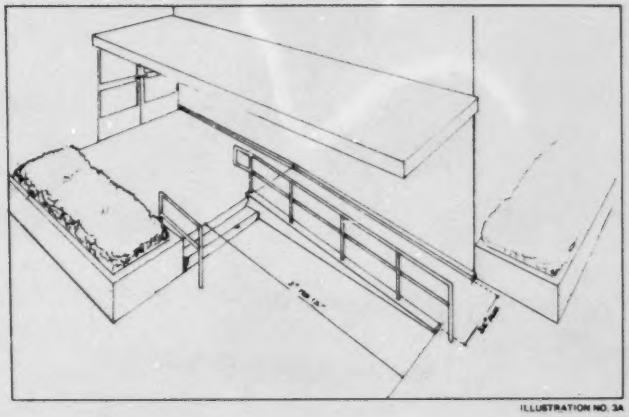
*c All open edged ramps are required to have safety guards of at least 2 in. in height and 2 in. in width.

*d Level platforms at no more than 30 feet intervals (rather than intermediate levels) for ramps. (See illustration 3C.)

*e Level platforms at exterior door openings shall extend at least 1 foot beyond each side of the doorway. (See illustration 3C.)

**f Level platforms at exterior door opening should be a minimum of 6 ft. in depth when door swings on platform (5 ft. required in 604.10 (C3) is not adequate). (See illustration 3C.)

*g Minimum of 6 ft. of level clearance at bottom of ramp (no obstructions). (See illustration 3C.)



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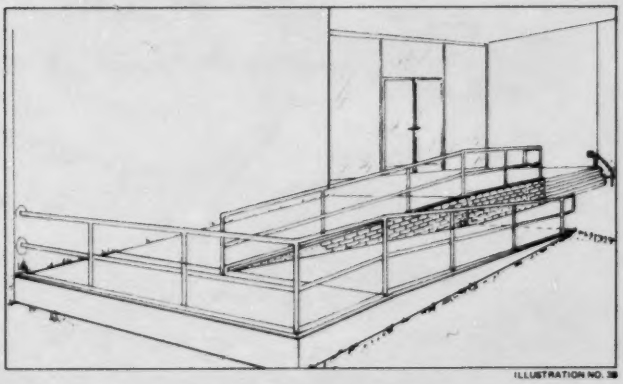

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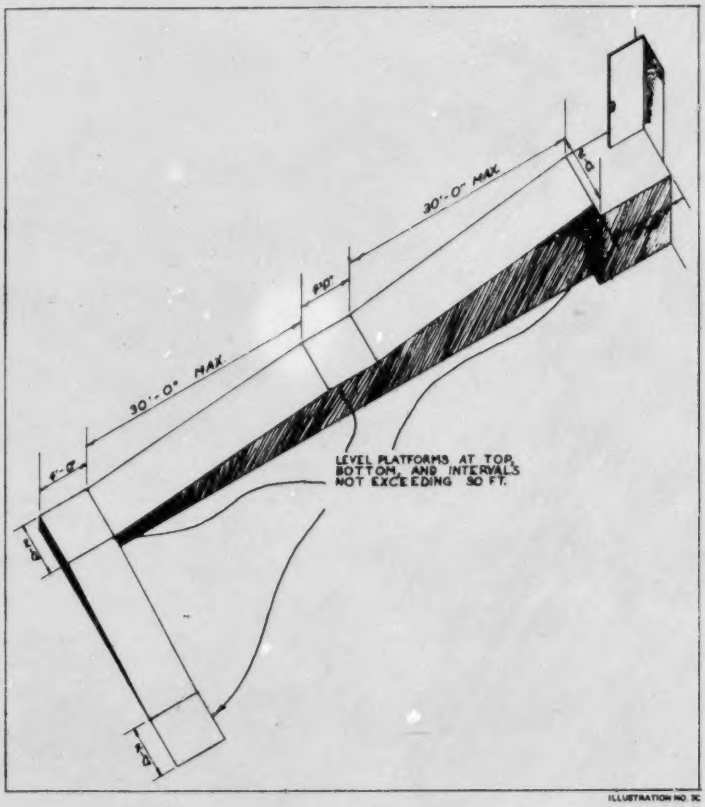


ILLUSTRATION NO. 3C

V Seating in Assembly Area
Building Code C26 801.7

h. Performance viewing positions shall be provided for wheelchair persons in accordance with the following schedule. These positions shall be located so as not to interfere with egress from any row of seats and shall be reachable by means of ramps and/or elevators. Steps shall not be allowed in the line of travel from the main approach entry to the designated locations.

Capacity of Assembly Space	Number of Viewing Positions
75 to 500	Minimum 2
501 to 1000	Minimum 3
1001 to 1500	Minimum 4

Over 1500-minimum 4 plus 1 for each 400 over 1500
(See recommendations a&b)

Recommendations

*a Greater number of viewing positions can readily be provided by the simple expedient of providing movable chairs which can be placed in these positions and sold to general public, giving management great flexibility. (See Illustration 4A-4B.)

**b Increase seating capacity as follows:

Capacity of Assembly Space	Number of Viewing Positions
to 500	Minimum 4
501 to 1000	Minimum 12
1001 to 1500	Minimum 16

Over 1500 minimum 16 plus 1 for each 1500 over 1500

*c. Cafeterias and dining areas shall be designed to allow passage of a wheelchair through the food service lanes and between tables. (See Illustration 4C - 4D)

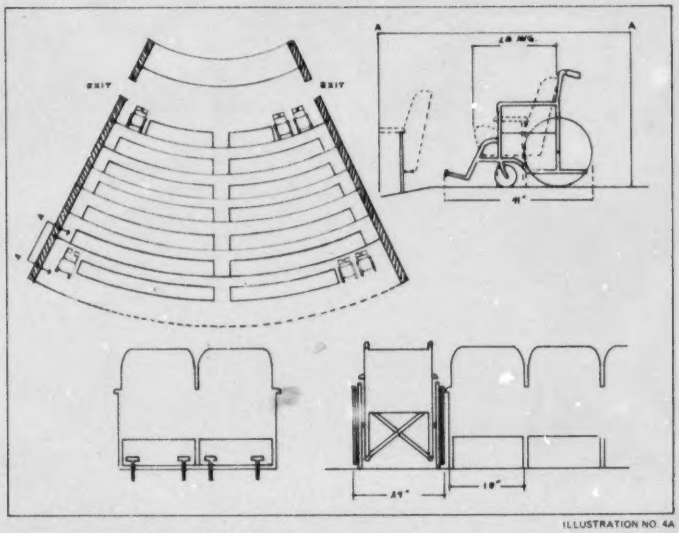
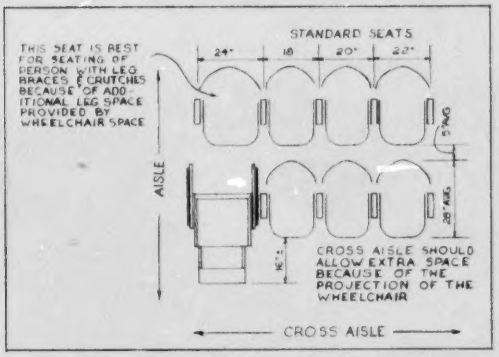
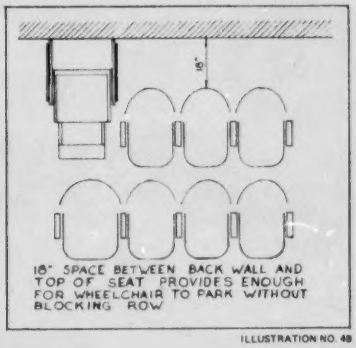


ILLUSTRATION NO. 4A


THIS SEAT IS BEST FOR SEATING OF PERSON WITH LEG BRACES & CRUTCHES BECAUSE OF ADDITIONAL LEG SPACE PROVIDED BY WHEELCHAIR SPACE
STANDARD SEATS
24"
18
20"
22"
AISLE
CROSS AISLE SHOULD ALLOW EXTRA SPACE BECAUSE OF THE PROJECTION OF THE WHEELCHAIR
CROSS AISLE



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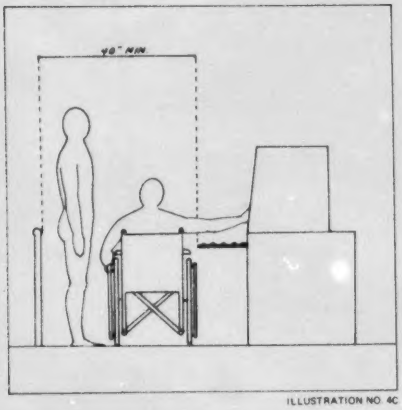

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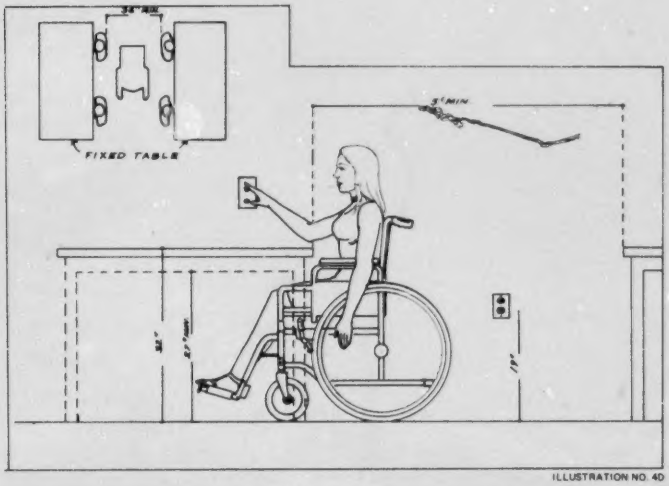


ILLUSTRATION NO. 4D

VI Bathrooms

Building Code P104.1 REQUIREMENTS 104.1 & 104.9

(a) Minimum number of fixtures. - The number of plumbing fixtures required for an occupancy shall be as listed in table RS 16-5. The requirements for an occupancy not listed in the table shall be subject to approval by the commissioner.

(b) Facilities for each sex. - Where public toilet or bathing facilities are designed for use by more than one person at a time, separate facilities shall be installed for each sex.

(c) Facilities for physically handicapped.

In every building where public toilet facilities are provided there shall be least one water closet stall which is accessible to the physically handicapped, at least 3 ft. wide by 5 ft. in depth having a door (if used) that is 32 in. wide and swings out to accommodate a wheelchair. The water closet seat in this one stall shall be set 20 in. above the floor. The stall shall be provided with grab bars on each side, the grab bars shall have an outside diameter of 1 1/2 in., and shall be 33 in. above and parrellel to the floor, with 1 1/2 in. clearance from the wall. One drinking fountain facility, not of the recessed type, set 30 in. above the floor, shall be provided. (See bathroom recommendation (h-1).) (See illustration 5 E & 5 F.)

(d) Accessibility. The fixtures specified in table RS 16-5 for public buildings shall be located not more than one floor above nor more than one floor below the floor occupied by the people for whose use the fixtures are intended, unless elevator service is available except that in buildings classified in occupancy group E which are accessible to the physically handicapped, there shall be at least one such toilet stall for male and one for female use for every 300 occupants of each sex in the building.

Recommendations

**a Preference is wall mounted water closet with narrow understructure. (See illustration 5A).

*b. Exposed drain and hot water pipes under sinks shall be insulated to prevent the occurrence of burns for those persons having a lack of sensation in their limbs. (See Illustration 5B.)

*c. Bathroom sink should be mounted to allow for a minimum of 27 in. clearance in height from the floor, and should not be more than 20 in. in depth from wall.

*d. At least one each of bathroom amenities, such as paper towels, shelves, dispensing machines, lower edge of mirrors shall be mounted, no more than 40 in. from the floor, excepting toilet paper which should be within arms reach when seated. (See Illustration 5B).

*e. If urinals are mounted above floor height, at least one should be no higher than 15 in. above floor level, with grab-bar on at least one side of the urinal for persons using crutches. (See Illustration 5C.)

*f. All public restrooms shall be identified as to sex distinction by raised or indentented block lettering at 2 in. to 3 in. in size placed on the door and/or on right door frame, at a height of approximately 5 feet.

*g. Where double entrance doors are used in a bathroom, the inner door must be multi-directional free swinging single or double doors or a free area of six feet between doors must be provided. (See Illustration 2G).

*h. There should be at least a minimum of one stall 6 feet wide x 5 feet deep. (see Illus. 5D).

**i. Grab bars mandated in code, are satisfactory for 3 ft. wide stall, however, in the 6 ft. wide stall grab bars should be placed to form an "L" shape on walls adjacent to toilet seat. (See Illustration 5D.)

**j. 32 in. stall doors opening outward are mandated. Preference would be 36 in. door.

**k. The water closet seat should be set 18 in. above the floor rather than the 20 in. recommended in the code about 1 ft. from the adjacent wall measure to the edge of seat.

**l. Two stalls when possible, toilet bowl to be mounted on one stall on right and in the other on the left; doors to be placed diagonally opposite from bowls.

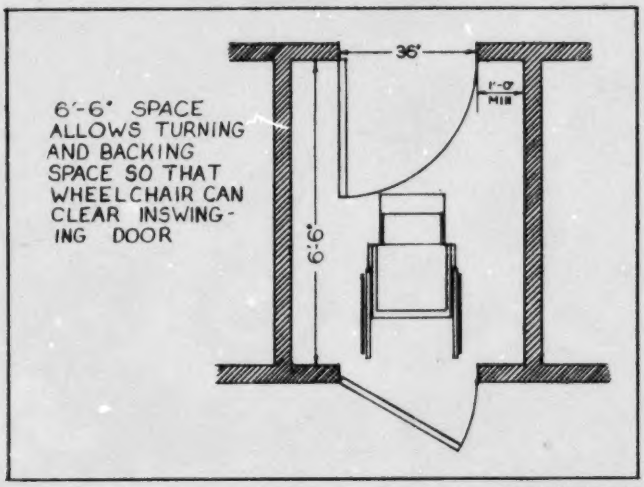


ILLUSTRATION NO. 2G

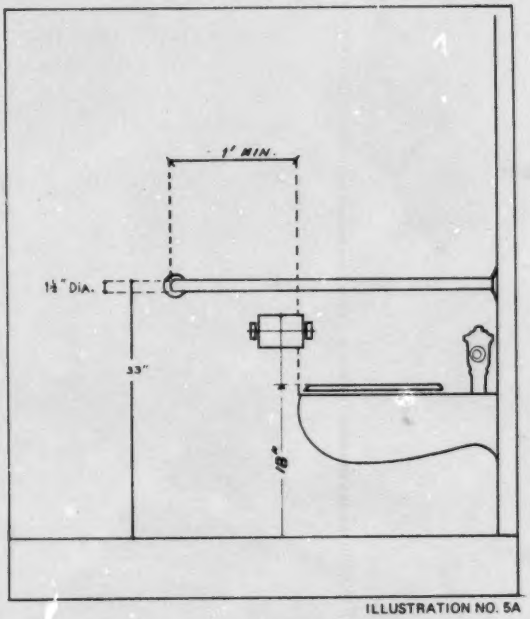
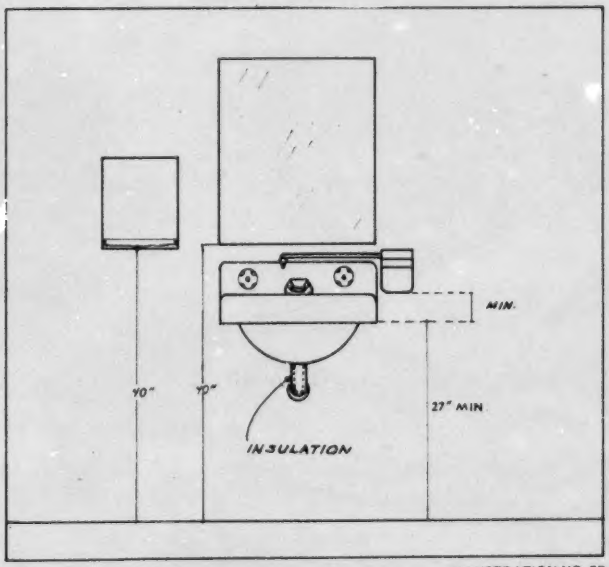


ILLUSTRATION NO. 5A



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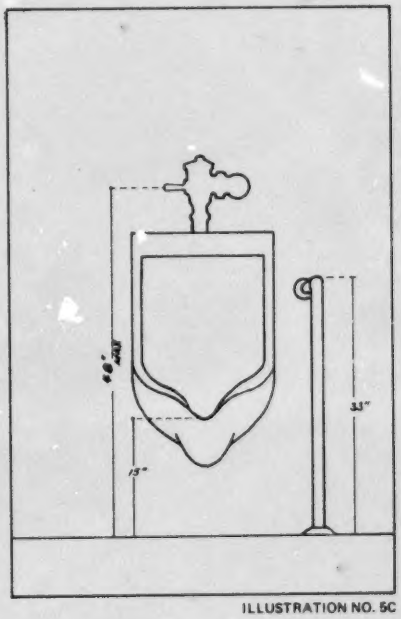

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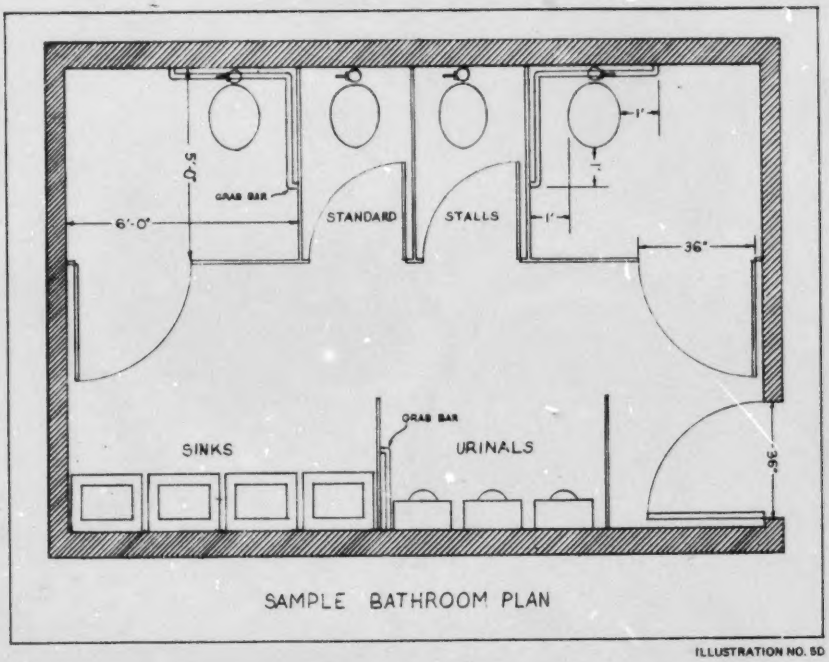


SAMPLE BATHROOM PLAN

ILLUSTRATION NO. 5D

DETAIL: GRAB BAR SECTION

ILLUSTRATION NO. 5E

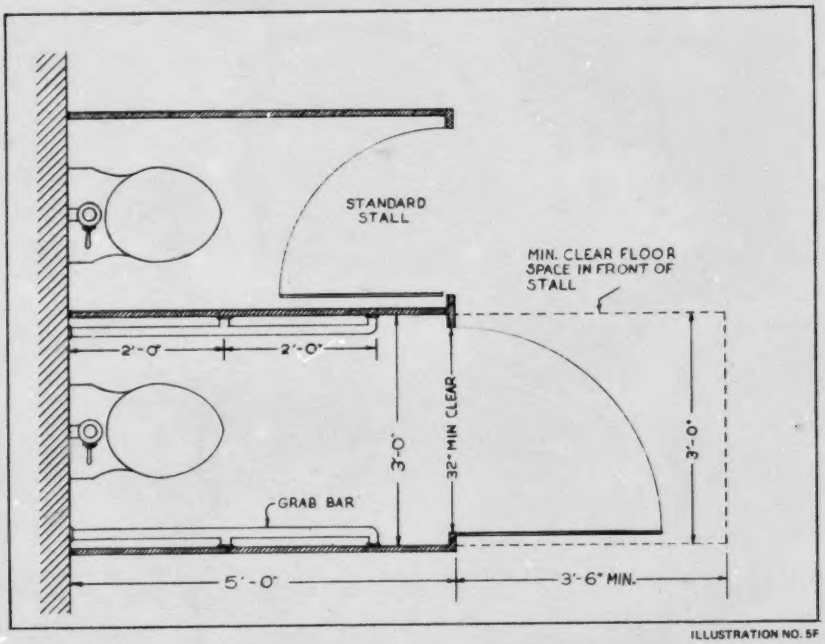


ILLUSTRATION NO. 5F

VII Showers
Building Code P.104.9

Recommendations

*a. At least one shower stall for each sex should be accessible and measure 36 in. wide x 48 in. deep.

*b. A hinged seat, 19 in. high, situated opposite the shower spray. Seat should be 36 in. to 42 in. in length recessed 6 in. to 12 in. from entrance and have non slip surface.

*c. Two wall length grab bars; one on wall opposite entrance. Garbar or handle 1 ft. long at entrance on wall accommodating hinged seat.

*d. Controls on wall opposite entrance near seat side (within easy reach).

*e. Secondary flexible shower spray adjacent to controls.

*f. If there is a raised sill at entrance to prevent runoff, sill must be bevelled to blend to a common level with the floor on both sides.

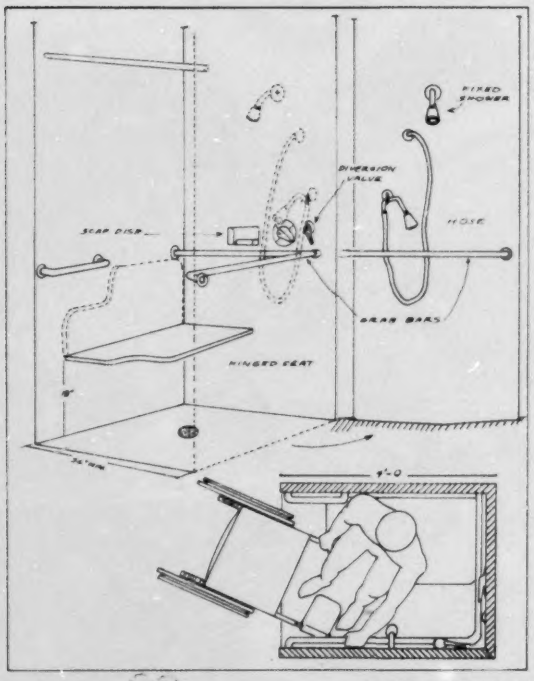


ILLUSTRATION NO. 6A

VIII Elevator & Conveyors
Building Code RS-18 in Code 110.1A

MODIFICATIONS. The provisions of USASI A17.1 1965 shall be subject to the following modifications. The following paragraph numbers and references are from that standard.

110.1A "and shall be at least 6 ft. 6 in. and have a clear width of door opening of at least 2 ft. 8 in.

Recommendations

*a. All public buildings of more than one story must have at least one passenger elevator easily accessible from an accessible primary entrance.

*b. At least one elevator in each bank of elevators shall be equipped with handrails and should be so identifiable. Height of handrails shall be 36 in. from the floor on three sides for ambulant handicapped & elderly persons.

*c. Alarm and Emergency buttons must be easy to push or touch sensitive; placed at a height no greater than 40 in. from the floor. (See Illustration - 7A - 7B.)

*d. All signal buttons inside and outside elevators must have raised or indented block letters and/or numbers so as to be indentifiable by blind persons, and preferably to be white letters and/or numerals on black background for the partially sighted.

*e. It is recommended that there be audible and visual signals indicating the up or down direction of the elevator and that the audible signals be sufficiently different for the blind to distinguish. (Higher pitch for up and lower pitch for down, or single note for up and double note for down.)

*f. Electric eye doors are preferable wherever possible.

*g. The minimal measurement of the interior elevator cab should be 5 ft. wide x 5 ft. 6 in. deep.

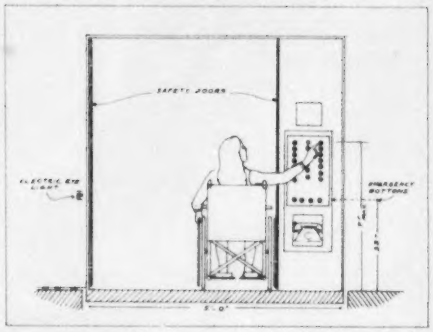


ILLUSTRATION NO. 7A

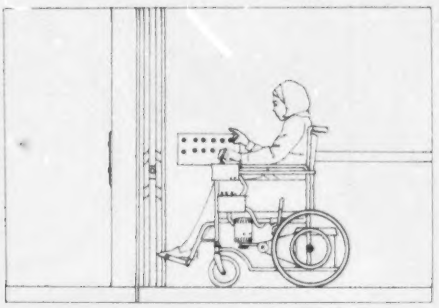


ILLUSTRATION NO. 7B

IX Hallways

Recommendations

*a. Protruding signs must be at least 7 ft. high. (See Illustration - 2F.)

*b. Minimum 60 in. in width.

*c. When necessary obstructions are required in a pedestrian area, they shall be placed in line with one another to reduce the hazard to blind persons and others. Fire fighting equipment is excepted.

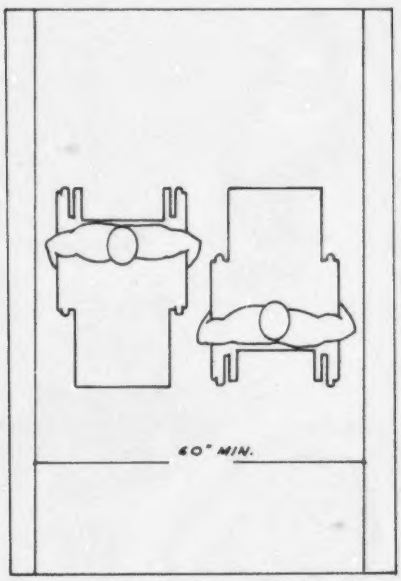


ILLUSTRATION NO. 8A

X Public Walks

Recommendations

*a. Should not have a gradient of more than 5% when topography allows.

*b. Wherever walks cross other walks, driveways or parking lots, they should blend to a common level.

*c. Should have continuing common surface uninterrupted by steps or abrupt changes in level.

*d. Should be a minimum of 60 in. wide.

*e. If doors open onto walkway a minimum level area of 5 ft. wide x 6 ft. deep is required. One foot to extend beyond each side of door.

*f. Should be totally unobstructed when possible.

*g. Necessary or desirable obstructions should be placed in line with one another for the safety of the blind and ease of mobility.

*h. Wherever curbs are required, curb cuts must be provided at all intersections and other crossing areas. Cuts must not exceed 1" in 12" or 8%; 1" in 20" or 5% is preferred. All cuts must blend to a common level with the street and have a minimum width of 36 in.; 48 in. is preferred. (See Illustration 9A-C.)

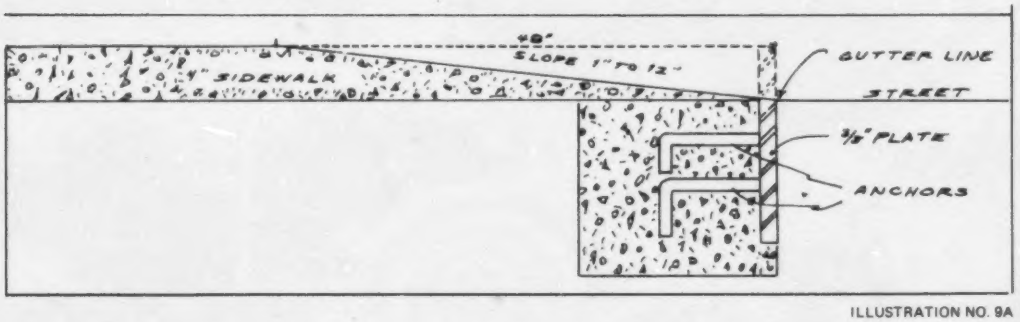


ILLUSTRATION NO. 9A

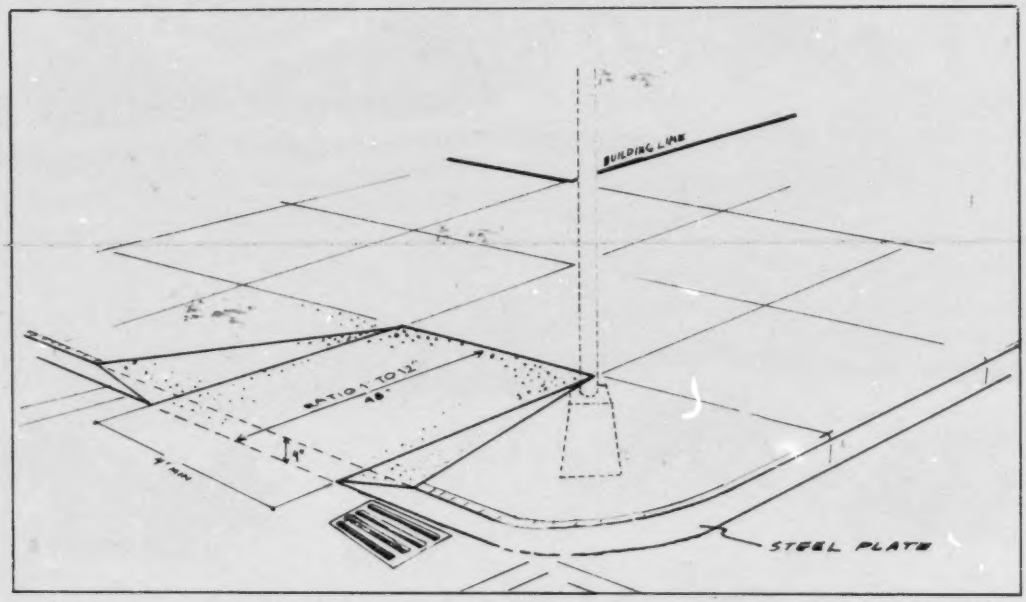


ILLUSTRATION NO. 9B

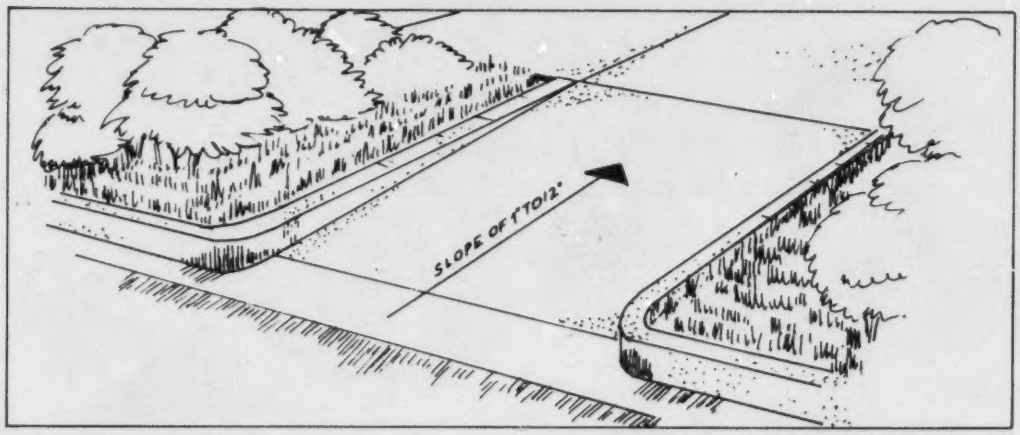


ILLUSTRATION NO. 9C

XI Stairs and Steps

Recommendations

**a. It is recommended that the maximum height of risers for each step be 6 in. in all buildings without elevators and other areas having flights of stairs.

*b. Avoid abrupt (Square) nosing -- eliminate nosing whenever possible. (See Illustration 10A.)

*c. Handrails should extend 18 in. beyond top and bottom of staircase unless it presents a safety hazard. (See Illustration - 10B.)

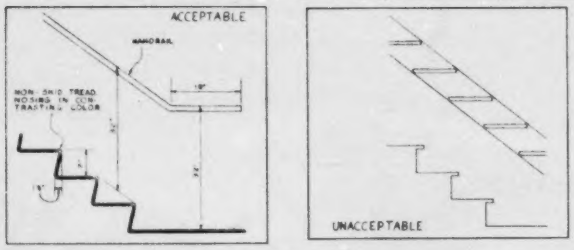


ILLUSTRATION NO. 10A

HANDRAILS
CONSIDERATION SHOULD BE GIVEN TO SHAPING HAND-RAILS TO PROVIDE EASIER GRIP FOR THOSE WITH LIMITED GRIPPING POWER
THIS TYPE HARD TO GRIP

ILLUSTRATION NO. 10B

XII Drinking Fountains

Recommendations

*a. Outdoors: At least one or an appropriate number should be no more than 30 in. high, not wall recessed and operable by hand.

*b. Indoors: At least one or an appropriate number should be no more than 30 in. high, wall recessed front of fountain flush with walk.

*c. Spout and controls near front edge of fountain.

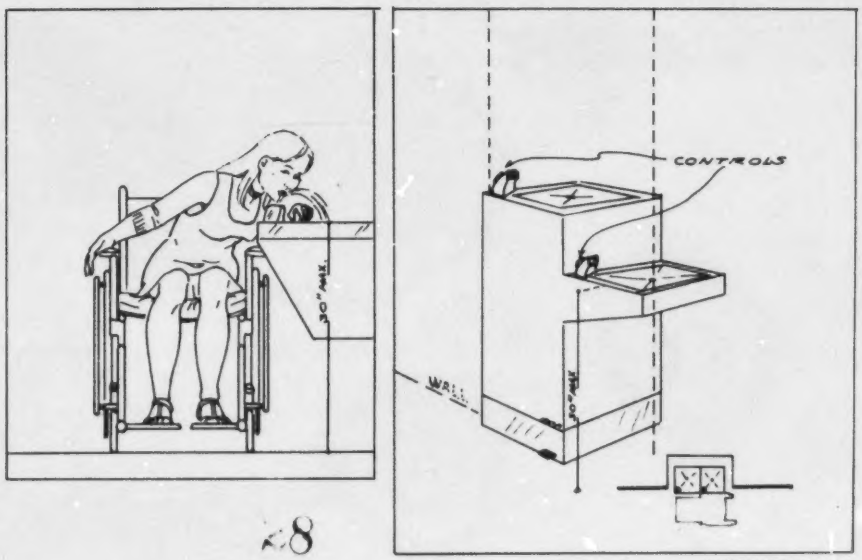


ILLUSTRATION NO. 11A

XIII Public Telephones

Recommendations

*a. One or an appropriate number should have coin slot no higher than 40" from floor; 36" door; low hinged seat so as to be usable by persons in wheelchairs or small people.

*b. At least one public telephone should be equipped for use by hard of hearing persons and should be so identified.

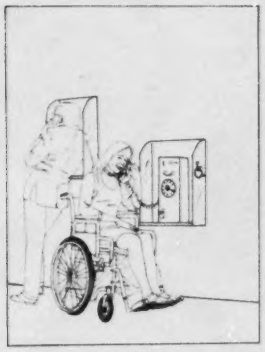


ILLUSTRATION NO. 12A

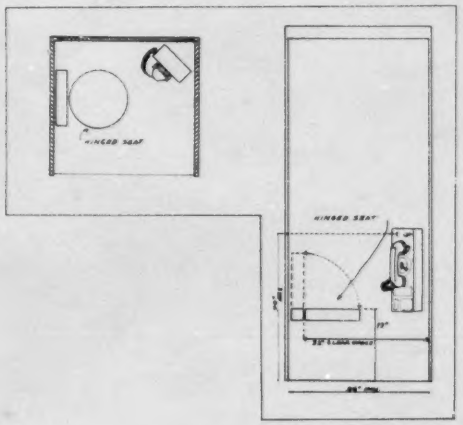


ILLUSTRATION NO. 12B

Note: New York Telephone Company has wide range of special equipment.

XIV Warning Signals related to safety

Recommendations

*a. Audible warning signals shall be accompanied by simultaneous visual signals for the benefit of those with hearing disabilities.

*b. Visual signals shall be accompanied by simultaneous audible signals for the benefit of the blind.

*c. The approaches to entrances, exits, changes in level and danger areas shall have discernably different floor texturing as a warning signal to the blind.

*d. Alarm & safety of all kinds must be placed no higher than 40 in. above floor.

XV Parking Lots and Garages

Recommendations

*a. Spaces that are accessible and approximate to the facility entrance should be set aside identified for use by individuals with physical disabilities.

*b. Parking spaces open on one side, allowing room for individuals on braces and crutches to get in and out of an automobile onto a level surface, suitable for wheeling and walking, is adequate.

*c. Parking spaces when placed between two conventional, diagonal or head-on parking spaces, should be 13 feet wide.

*d. Care in planning should be exercised so that individuals using braces and crutches are not compelled to wheel or walk behind parked cars.

*e. Consideration should be given to the distribution of spaces for use by the disabled in accordance with the frequency and persistence of parking needs.

*f. Number of spaces required to be provided for the handicapped.

Capacity	Numbers of Spaces
7 to 50	Minimum of 2
51 to 100	Minimum of 3
101 to 150	Minimum of 4

Note: Refer to C26, 601.1 (d)

Public Garages occupancy groups B1 and B2 are not required to meet Building Access Standards. To create an accessible building with an inacessible garage would serve to defeat the concept of total accessibility.

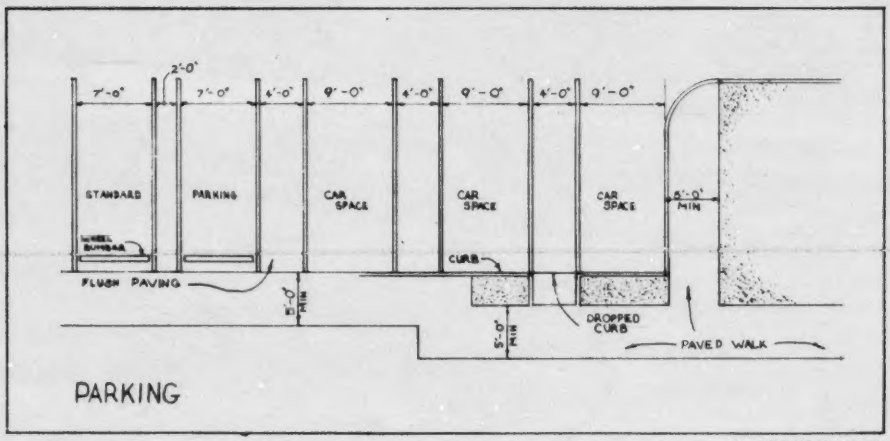


ILLUSTRATION NO. 13A

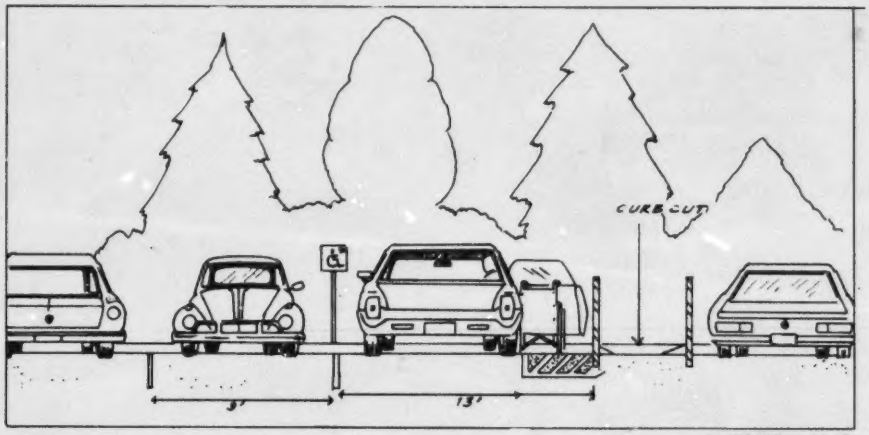


ILLUSTRATION NO. 13B

XVI

Recommendations, Door Letters and/or numerals, excluding commercial identification.

*a. It is recommended that they be white lettering on black background: 2 1/2 in. to 3 in. height. Either raised or indented block lettering and approximately 5 1/2 ft. above floor level on right side wall or door frame.

*b. Letters and/or numerals under 1 in. in size should be raised block lettering - those more than 1 in. in size may be either raised or indented, but should be block letters in either case.

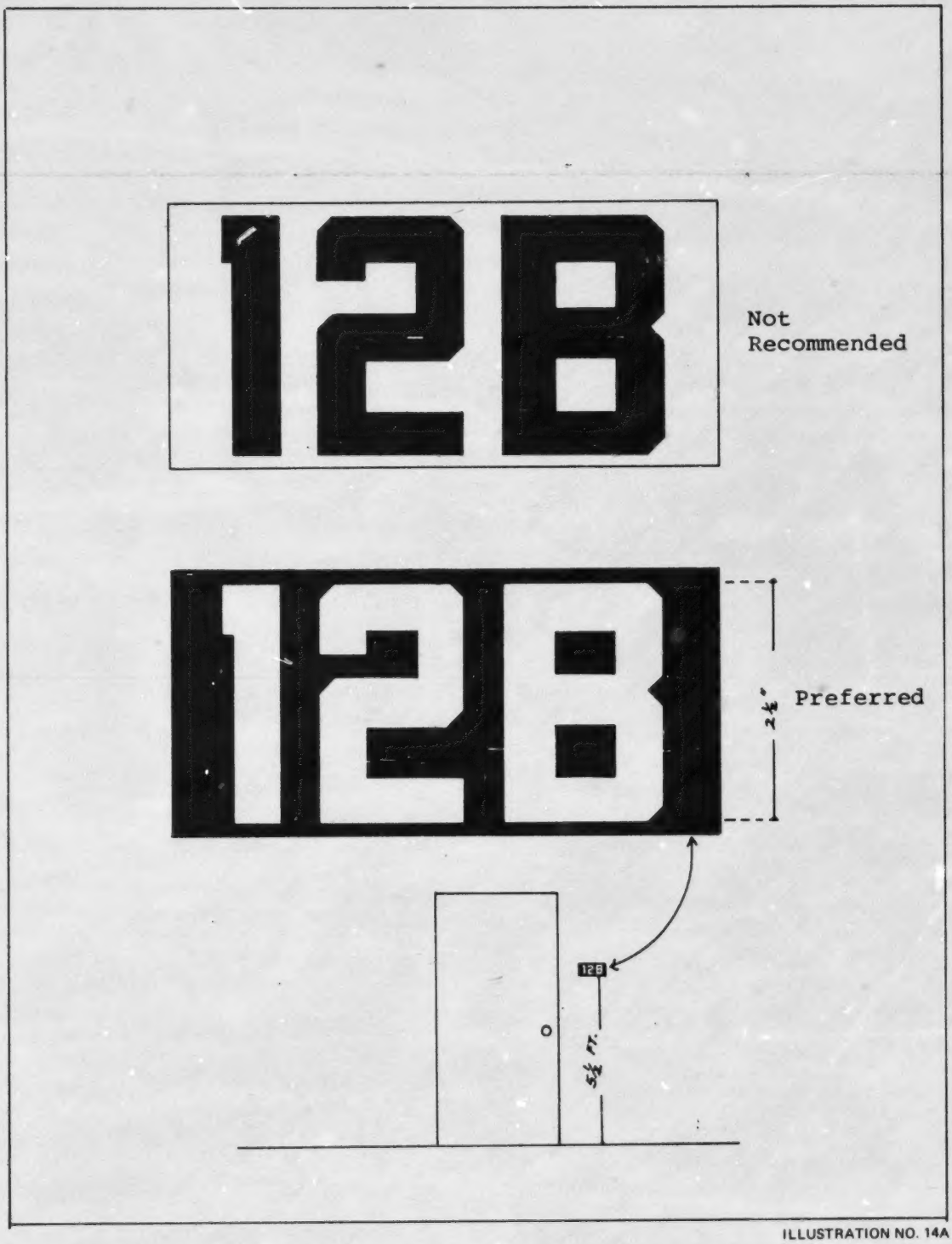


ILLUSTRATION NO. 14A

WHEELCHAIR SPECIFICATIONS

These are specifications for an average wheelchair for an average sized person. Chairs are made to accommodate persons with larger dimensions. Of course, motorized chairs come as wide 29", with 6" allowance for additional equipment.

ADULT CHAIR MEASUREMENTS
(Non Motorized)

		STANDARD	RANGE
A	Length Over-All	41 1/2	39 - 45
B	Width Over-All	24	24 - 25 1/2
C	Height Over-All	36	36 - 42
D	Height: Arms from floor	29	29 - 31 1/4
E	Height: Seat from floor	19 1/2	19 1/2 - 22
	Footrest: Min. Extension	14 1/2	13 - 16 1/2
	Footrest: Max. Extension	20 3/4	19 1/2 - 20 3/4
	Wheel Diameter: Front	8 or 5	5, 8,
	Wheel Diameter: Rear	24	20, - 24
	Folded Width	10	10 - 11 1/2

Height of pusher handles (rear) from floor: 36"
Front to rear 42" with additional 4" to 6" for persons' foot extension
Turning space (180° & 360°): 60" x 60"
Elbow room required for chair movement: 6" on each side.

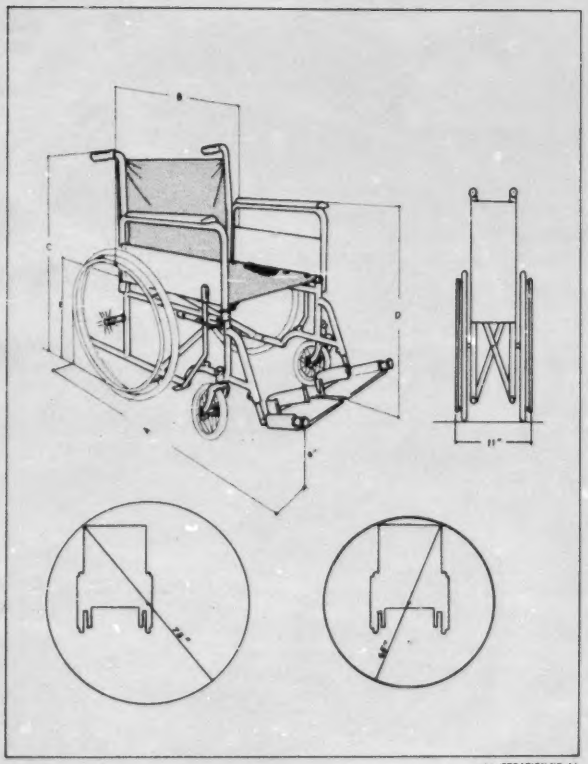


ILLUSTRATION NO. 1A

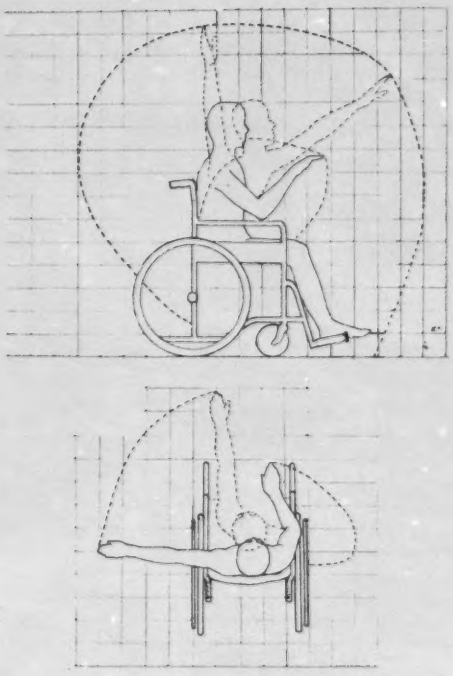


ILLUSTRATION NO. 1B

BARRIER-FREE CHECKLIST

1. Parking Lots

☐ Spaces should be 13' wide when placed between two conventional diagonal head on parking spaces.

☐ Not compelled to wheel or walk behind parked cars.

☐ Number of Spaces:

Capacity	Number of Spaces
7 to 50	Minimum 2
51 to 100	Minimum 3
100 to 150	Minimum 4

☐ Where there are curbs there should be curb cuts.

2. Curb Cuts

☐ Maximum 8% gradient or 1" rise in 12'

☐ Blend to a common level with walking area

3. Walks

☐ Minimum 60" wide

☐ Maximum 5% gradient or 1" rise in 20'

☐ Nonslip

☐ No abrupt changes in level

4. Ramps

☐ Minimum of 36" in width

☐ Maximum 8% gradient or 1" rise in 12'

☐ Handrails on both sides 32" high extending 18" beyond top and bottom of ramp

☐ Midrails 22" high

☐ Safety edges 2" high, 4" wide

☐ Minimum of 6' clear area at bottom of the ramp

☐ Ramp leading to door entrance must have level platform extending 1' beyond door frame on each side and 6' in depth to allow for 36" outward door swing.

5. Entrance

☐ NYC Building Code mandates at least one primary entrance to each building be accessible

6. Doors & Doorways

☐ Opening no less than 36"

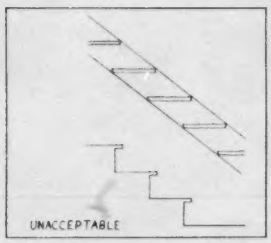
☐ Operable by a single effort

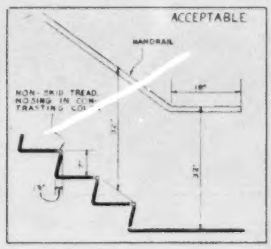
☐ No more than 8 lbs. pressure required to open

7. Stairs

☐ Should not have abrupt (square) nosing; it is preferable to eliminate nosing.

☐ Discernably textured flooring minimum 24" at all landings for benefit of blind.





☐ stair handrails should be 32" high as measured from the tread of the riser.

8. Floors

☐ Nonslip surface

☐ No abrupt change in level

9. Restrooms

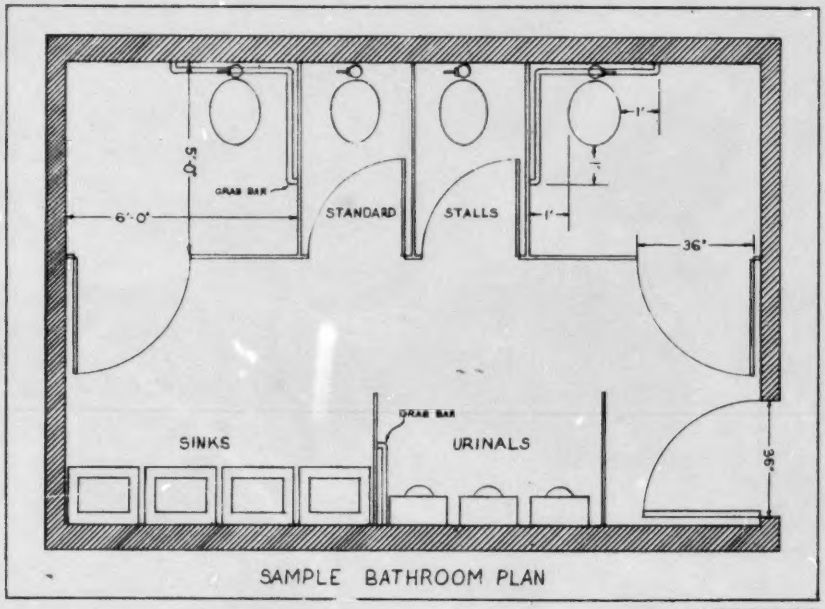
☐ 36" entrance door

☐ If there is an internal entrance door, inside door should be multi-directional free swinging type (saloon doors) 36" in width

☐ Sex identification raised or indented block lettering 2" to 3" - 5' from floor

- ☐ Urinal not more than 15" from floor
- ☐ Amenities, ie. towel dispensers, mirrors not more than 40" from floor
- ☐ Sink-27" clearance from floor
- ☐ Toilet stall size 5' deep x 6' wide
- ☐ Water closet wall mounted 18" from floor at one corner on back wall
- ☐ Door opening diagonally across from bowl

Note: Ideally two for each sex as in diagram.



SAMPLE BATHROOM PLAN

ILLUSTRATION NO. 80

10. Drinking Fountains - appropriate number

- ☐ No more than 30" in height - non recessed for outdoors
- ☐ Recessed if indoors - front of fountain flush with wall (not inside alcove)
- ☐ Operable by single hand motion; lever type preferable to knob

Note: New Fountains available built like inverted "L"

11. Public Telephones - appropriate number

- ☐ Coin slot no higher than 40" high
- ☐ Equipped for people who are hard of hearing

Note: N.Y. Telephone Company has wide range of special equipment.

12. Showers appropriate number

☐ Alternate 1: - Transfer from wheelchair to seat from outside or shower seated in wheelchair:

☐ Size 3' x 4'

☐ 36" door opening outward - curtain preferred

☐ Hinged seat 15" deep along side wall

☐ Secondary flexible tube shower spray adjacent to controls

☐ Controls on back wall near seat side (within easy reach)

☐ Grab bars 33" high, 1 1/2" in diameter, 1 1/2" from wall as illustrated

☐ Alternate 2: - Transfer from wheelchair inside stall

☐ Size 5' x 6'

☐ 36" door opening outward - curtain preferred

☐ Raised entrance bevelled on both sides to blend to a common level with floor. Seat - shower spray - controls same as alternate 1.